Lake Wobegon Be Gone! The "Below-Average Effect" and the Egocentric Nature of Comparative Ability Judgments

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Like the inhabitants of Garrison Keillor's (1985) fictional community of Lake Wobegon, most people appear to believe that their skills and abilities are above average. A series of studies illustrates one of the reasons why: When people compare themselves with their peers, they focus egocentrically on their own skills and insufficiently take into account the skills of the comparison group. This tendency engenders the oft-documented *above-average effect* in domains in which absolute skills tend to be high but produces a reliable *below-average effect* in domains in which absolute skills tend to be low (Studies 1 and 2). In Study 3, cognitive load exacerbated these biases, suggesting that people "anchor" on their assessment of their own abilities and insufficiently "adjust" to take into account the skills of the comparison group. These results suggest that the tendency to see oneself as above average may not be as ubiquitous as once thought.

> I can't help about the shape I'm in,
> I can't sing, I ain't pretty, and my legs are thin.
>
> —Mick Fleetwood, *Oh Well*

There is no place for Mick Fleetwood in the recent social psychological literature. Recent work paints a consistent portrait of people as anything but self-critical and plagued by self-doubt. Instead, most of us appear to believe that we are more athletic, intelligent, organized, ethical, logical, interesting, fair-minded, and healthy—not to mention more attractive—than the average person (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; College Board, 1976–1977; Heine & Lehman, 1997; Kruger & Dunning, in press; Larwood, 1978; Messick, Bloom, Boldizar, & Samuelson, 1985; Weinstein, 1980). As the author of one of the best-selling introductory psychology textbooks in the United States put it, "for nearly any subjective and socially desirable dimension . . . most people see themselves as better than average" (Myers, 1998, p. 440). The *above-average effect* has been observed not only in individualist cultures such as Canada, France, the Netherlands, Australia, and the United States, but also in collectivist cultures such as Japan and China, where modesty is purportedly praised (Heine & Lehman, 1997; Myers, 1996). The world, it seems, "is Garrison Keillor's Lake Wobegon writ large—a place where 'all the women are strong, all the men are good looking, and all the children are above average' " (Myers, 1998, p. 440).

Traditionally, these and related phenomena have been taken as evidence of motivated reasoning. Simply put, people exaggerate their skills, traits, and abilities in the service of important psychological needs such as boosting self-esteem (Alicke, 1985; Brown, 1990; Campbell, 1986; Gilovich, 1991; Kunda, 1990; Kunda & Sanitioso, 1989; Taylor & Brown, 1988). As a result, people tend to believe that they are above average.

One wonders, however, whether an important piece of the portrait might be missing. Is Mick Fleetwood truly such an anomaly? Anecdotal evidence, at least, suggests that he is not. As any clinician can attest, individuals sometimes hold unrealistically negative impressions of their strengths and achievements—sentiments apparently common enough to have spawned a booming industry offering self-help books and confidence-building audiotapes.

There are strands of empirical exceptions to the above-average effect as well. Klar, Medding, and Sarel (1996) reported some preliminary data showing that when students consider domains such as "being able to study long hours," "time dragging when preparing assignments," and "trouble concentrating when tired," they systematically rate themselves as worse than their peers. Van Yperen (1992) found a similar tendency among professional soccer players from the Netherlands (including several members of the Dutch national team). When players compared their ability to

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“head” the ball with that of the average professional soccer player, a greater proportion thought they were below average than above.

Even the most widely cited demonstration of the above-average effect, a national survey conducted by the College Board (1976–1977), questions the ubiquity of the above-average effect. Although most of the nearly 1 million high school students surveyed rated their skills of spoken expression, organization, and ability to get along with others as superior to those of their peers, only 39% thought that they were above-average artists, and only 38% felt this way about their acting or mechanical ability.

The Egocentric Nature of Comparative Ability Judgments

How might these divergent findings be reconciled? When are people likely to believe that they are above average and when are they likely to believe that they are below? The thesis I present in this article is that although above-average effects are common, so too are *below-average effects,* and that each stems from the same underlying mechanism. In particular, I argue that comparative ability judgments are inherently egocentric: People base their assessments of how they compare with their peers on their own level of ability (“How skilled am I?”) and insufficiently take into account the skills of the comparison group (“How skilled are my peers?”). As a result, people tend to see themselves as above average in domains in which absolute skills tend to be high (or the threshold for successful performance is low) and below average in domains in which absolute skills tend to be low (or the threshold for successful performance is high).

Consider the ability to drive a car or operate a computer mouse, tasks most of us have no trouble doing. But note that just because most of us have no trouble with these skills—that we can park with the radio on or double-click to our hearts’ content—it does not follow that we are above average. The same, after all, is true of most people. But if people focus on their own skills when they compare themselves with others, that is precisely what they will conclude. Drivers will fail to take into account the fact that although they themselves are highly skilled, so too are their peers. Similarly, computer mouse operators may have a difficult time getting beyond the fact that despite their own profound ability to both point and click—perhaps even simultaneously—this does not necessarily imply that they are more proficient than their peers. In such domains, domains in which absolute skills tend to be high, people may come to believe that they are above average.

When people instead consider more challenging domains, domains in which absolute skills tend to be low, a completely different picture is likely to emerge. When considering the ability to study long hours, create fine art, or “head” a soccer ball, focusing on one’s own skills is likely to leave most of us with the impression that we are below average. We may forget that our own inability to pull an “all-nighter,” paint like Picasso, or head a soccer ball (or any ball, for that matter) does not imply that we are below average.

Indeed, a closer look at the College Board (1976–1977) survey described earlier suggests that the tendency of respondents to describe themselves as above average might have been a function of the ease or difficulty of the ability domain; that is, whether the domain is one in which absolute skills tend to be high versus low.[1] For instance, most of us are considerably more proficient at expressing ourselves verbally and getting along with others (two abilities that yielded robust above-average effects) than we are as actors or artists (two abilities that did not).

Table 1
Above-Average Effects in the College Board Survey by Domain Difficulty (N = 828,516)

Ability	Domain difficulty[a]	% rating themselves “above average”
Ability to get along with others	3.3	89
Written expression	3.7	64
Spoken expression	3.7	63
Leadership	4.1	70
Mathematics	4.1	57
Creative writing	4.2	56
Science	4.5	52
Organizing for work	4.6	69
Music	4.8	44
Athletics	5.1	60
Art	5.1	39
Sales	5.3	50
Acting	5.7	38
Mechanics	6.3	38

[a] Reverse scored so that higher numbers reflect greater domain difficulty.

To verify this relationship, I asked 26 Cornell University undergraduates to rate their own absolute skills in each of the 14 ability domains used in the College Board survey on a scale from 1 (*very unskilled*) to 10 (*very skilled*) and correlated these ratings with the extent of bias in the College Board survey.[2] Participants also rated the desirability and ambiguity of each of the abilities, factors that prior research has shown can influence self-assessments (Alicke, 1985; Brown, 1986; Dunning, Meyerowitz, & Holzberg, 1989; Felson, 1981; Kunda & Sanitioso, 1989).

As Table 1 illustrates, domain difficulty was a strong predictor of the extent of bias. The correlation between domain difficulty and the percentage of survey respondents rating themselves “above average” was −.81 ($df = 12, p < .001$) and remained strong after holding constant ambiguity, $r(11) = -.83, p < .001$; desirability, $r(11) = -.58, p < .05$; or both, $r(10) = -.62, p < .05$. Tellingly, the easiest ability, the “ability to get along with others,” manifested the greatest above-average effect, whereas the most difficult skills (acting and mechanics) manifested the least.

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[1] For lack of better terms, I use *easy abilities* and *difficult abilities* throughout this article as a shorthand for tasks in which absolute skills tend to be high and low, respectively. Note that these definitions do not necessarily carry with them any implications about whether the tasks are especially easy or difficult to master or perform. There very well may be tasks that are “easy” in the sense that absolute skills tend to be high but “difficult” in the sense that they require considerable effort to perform well (such as getting along with others). Conversely, there may be tasks that are “difficult” in the sense that absolute skills tend to be low but “easy” in the sense that they may be easy to perform if one had the inkling (such as poaching an egg). Functionally, however, the tasks that are easy by one definition tend to be easy by the other: When I asked 48 participants to rate each of the abilities examined in the studies presented in this article both in terms of their own skills and the extent to which “it is relatively easy or difficult to excel at the ability,” the correlation between the two was −.88, $p < .001$.

[2] I thank Robert Majoros at the College Board Teaching and Learning Division for his help in obtaining the original survey data.

This account may explain another exception to the above-average effect, one that may hit closer to home for some readers. Clance and O'Toole (1987, p. 51) described a robust tendency for young academics to feel that they are "impostors" who do not *really* belong "here with all these bright, competent, people"—despite having earned degrees, high scores on achievement tests, and professional recognition from colleagues (Clance & Imes, 1978; Topping & Kimmel, 1985). It is perhaps no coincidence that this *impostor phenomenon* occurs in a domain wrought with as many difficulties and hurdles as academia. As novice academics struggle to meet these challenges, it may be difficult for them to realize that their peers are likely to have similar woes, leading them to conclude, perhaps erroneously, that they are worse off than their peers.

Anchoring and Insufficient Adjustment

What might cause people to focus on their own level of ability when comparing themselves with others? One possibility stems from the fact that one's own skills are likely to serve as a judgmental anchor. After all, the very nature of comparing X with Y logically calls for X to be considered first and serve as the subject of comparison (Tversky, 1977). When comparing oneself with others, then, one's own skills are likely to be assessed first, with the abilities of others figured in afterward (Srull & Gaelick, 1983). Because judgmental adjustments tend to be insufficient (Jacowitz & Kahneman, 1995; Quattrone, 1982; Slovic & Lichtenstein, 1971; Tversky & Kahneman, 1974), however, this peer consideration is likely to be incomplete. It may be difficult to remember that the answer to the question, "How do I compare with my peers?" is as much a function of "my peers" as it is of "I." This may explain why the above-average effect is greater when people compare themselves with the average person than when they do the reverse; that is, when they compare the average person with themselves (Hoorens, 1995).

Another reason one's own skills may serve as a judgmental anchor is that they are likely to come to mind more readily and automatically than the skills of the average person. After all, because conceptual representations become more accessible the more they are activated (Higgins & Bargh, 1987; Higgins & King, 1981; Srull & Wyer, 1979), self-representations are likely to be among the most accessible representations that people possess (Dunning & Hayes, 1997). We spend considerably more time stewing over our own strengths and shortcomings than those of our peers. In addition, self-representations tend to be both affectively important to the self (Holyoak & Gordon, 1983; Prentice, 1990) and highly complex factors that promote accessibility (Andersen, Klatzky, & Murray, 1990; Higgins & King, 1981; Klatzky & Andersen, 1988). Finally, we have a greater database of information to call upon about ourselves than our peers (Ross & Sicoly, 1979). We cannot fail to notice the instances when we perform a particularly impressive parallel parking job, but will frequently miss such an event when it is executed by others—not to mention important contextual details such as whether it was performed with an unreliable clutch, loose steering, or the radio blasting away at an unsettling volume. It is perhaps for these reasons that the above-average effect is greater when people compare themselves with an unfamiliar person (e.g., the "average person" or "average peer") than with a well-known person, such as a familiar peer or best friend (Alicke et al., 1995; Codol, 1975; Harris & Middleton, 1994; Klar et al., 1996; Perloff & Fetzer, 1986; Quadrel, Fischhoff, & Davis, 1993; Regan, Snyder, & Kassin, 1995).

Regardless of the cause, the tendency to anchor on one's own skills when comparing oneself with one's peers suggests, first, that people's judgments of how they compare with others are likely to be based far more on their assessments of their own skills than on their assessments of the skills of the comparison group. As a result, self-estimates should account for more variance in comparative ability ratings than should peer estimates.

But the most important implication of this account is that it challenges the ubiquity of inflated ability assessments and thus reconciles the findings from the self-enhancement literature with what clinicians and everyday observers confront every day. This anchoring-and-adjustment account predicts an above-average effect in domains characterized by high levels of skill, domains such as driving, operating a computer mouse, or the ability to get along with others. But when people instead consider domains in which absolute skills tend to be low, the anchoring-and-adjustment account predicts the opposite: a below-average effect. Those of us whose computer programming skills or acting talents leave much to be desired are likely to anchor on this fact and fail to take into account that others may be similarly inept. As a result, we may come to believe that we are worse than our peers—despite strong motivation to think otherwise. The present research was designed to test these hypotheses.

Study 1

As an initial investigation, participants in Study 1 compared themselves with their peers along a series of ability domains of varying difficulty. In addition to these comparative ratings, participants also provided separate estimates of their own absolute abilities and the absolute abilities of their classmates. If people anchor on their own level of ability and insufficiently adjust to take into account the skills of others, then participants' judgments of their own abilities should account for more variance in their comparative ability judgments than should their judgments of the skills of their classmates. In addition, participants should tend to see themselves as above average when considering easy abilities and below average when considering more challenging domains.

Method

Participants. Thirty-seven Cornell University undergraduates (29 women, 8 men) from an introductory psychology course participated individually and earned extra credit for their participation.

Procedure. Participants completed a questionnaire in which eight abilities were described. For each ability, participants first compared themselves with other students from their course by writing down a percentile from 0 (*I'm at the very bottom*) to 50 (*I'm exactly average*) to 99 (*I'm at the very top*). Second, participants provided separate estimates of their own absolute ability and the absolute ability of their classmates, each on a scale from 1 (*very unskilled*) to 10 (*very skilled*). Third, they rated the desirability of the ability by indicating whether "it is better to be very unskilled or very skilled at this ability" on a similar scale. Fourth, participants rated the ambiguity of the ability on a scale from 1 (*very ambiguous—has many meanings*) to 10 (*very concrete—has one meaning*). Finally, participants indicated whether they had any experience in the ability domain. The order in which participants answered these questions and the order in which the various abilities were presented were counterbalanced across participants.

Half of the abilities were included because they are easy (i.e., most people tend to be proficient), whereas the others were included because they are difficult (i.e., most people tend to be unskilled). The four easy abilities were *operating a computer mouse, driving a car, riding a bicycle,* and *saving money.* The four difficult abilities were *programming a computer, juggling, playing chess,* and *telling a really good joke.* The ease or difficulty of each ability was determined by the extent to which a separate group of pretest participants ($n = 39$) considered themselves skilled or unskilled. Each of the easy abilities corresponded to higher self-ratings (on a 10-point scale) than each of the difficult abilities (all $ps < .001$). These ratings, reverse scored so that higher numbers reflect greater domain difficulty, are presented in Table 2.

Results

Neither gender nor the order in which specific abilities and questionnaire items were presented qualified the basic findings in this or any of the studies reported in this article and thus receive no further mention.

Above- and below-average effects. As predicted, the extent to which participants were miscalibrated with respect to their comparative skills was related to the ease or difficulty of the ability domain. As Table 2 indicates, the easier the ability, the higher participants' estimates of how they compare with their peers: The correlation between domain difficulty and participants' comparative ability estimates across the eight abilities was $-.96$ ($df = 6$, $p < .001$). Similarly, the correlation between participants' ratings of their own absolute abilities and their comparative abilities was .95 ($df = 6$, $p < .001$).

The ease or difficulty of the abilities also determined whether participants believed they were above or below average. On average, participants thought they were above average (i.e., above the 50th percentile) in all four of the easy ability domains (all $ps < .01$). Of course, these effects are not surprising from a motivational standpoint, given that these abilities were also considered quite desirable: The mean desirability rating across the easy abilities was 2.6 points above the midpoint of the scale, $t(36) = 13.51$, $p < .0001$.

What is surprising, at least from a motivational interpretation, is that participants systematically believed that they were worse than their peers when they considered more challenging domains. As Table 2 shows, the mean percentile estimates for these abilities ranged from 24.8 to 46.4, all but one significantly less than 50% at $p < .0001$. This was true despite the fact that participants also found these abilities to be quite desirable: The mean desirability rating across the difficult abilities exceeded the midpoint of the scale by more than a full scale point, a highly significant difference, $t(36) = 5.06$, $p < .0001$. To be sure, the easy abilities were considered somewhat more desirable than the difficult abilities—the correlation between mean percentile estimates and desirability ratings across abilities was .77 ($df = 6$, $p < .025$)—but the fact that participants considered themselves to be below average in desirable ability domains suggests that these effects cannot be explained by traditional motivational accounts. Indeed, the high correlation between domain difficulty and participants' comparative ability estimates reported above remained strong after desirability was held constant, $r(5) = -.93$, $p < .01$.

Nor can these effects be explained by differences in ambiguity. On average, participants considered the difficult abilities to be more ambiguous than the easy abilities, $t(36) = 3.40$, $p < .01$. Because people tend to define ambiguous traits and abilities to their own advantage (Dunning et al., 1989), this increased ambiguity would presumably work to increase rather than decrease perceptions of how one compares with others. As was the case with desirability, the correlation between pretest difficulty ratings and mean percentile estimates is highly significant after ambiguity was held constant, $r(5) = -.97$, $p < .001$.

The judgmental weight of own versus peers' abilities. The data presented above are consistent with an anchoring-and-adjustment interpretation: The higher participants' own skills, the higher their estimates of how they compare with their peers. Of course, this relationship might also be expected if participants considered their own skills and the skills of the comparison group equally. To help decide between these possibilities, I conducted a series of multiple

Table 2
Mean Comparative Ability Estimates and Judgmental Weight of Own Versus Peers' Abilities by Domain Difficulty, Study 1 (N = 37)

Ability	Domain difficulty[a]	Percentile estimate[b]	Judgmental weight of: Own ability[c]	Judgmental weight of: Peers' ability[c]
Easy				
Using mouse	3.1	58.8**	.21	.06
Driving	3.6	65.4****	.89****	−.25*
Riding bicycle	3.9	64.0****	.61****	−.02
Saving money	4.3	61.5**	.90****	−.25***
Difficult				
Telling jokes	6.1	46.4	.91****	−.03
Playing chess	7.1	27.8****	.96****	−.22**
Juggling	8.3	26.5****	.89****	−.16
Computer programming	8.7	24.8****	.85****	−.10

[a] Higher numbers reflect greater difficulty. [b] Mean percentile estimates above 50 reflect an above-average effect, estimates below 50 reflect a below-average effect. [c] Standardized betas from multiple regressions predicting participants' comparative ability (percentile) estimates from their estimates of their own absolute ability and the absolute ability of their peers, respectively.
$^*p < .05$. $^{**}p < .01$. $^{***}p < .001$. $^{****}p < .0001$.

regressions, one for each of the eight abilities, predicting participants' estimates of how they compare with their peers from their estimates of their own abilities and the abilities of their peers. The standardized betas from each of these eight regressions are presented in the last two columns of Table 2.

These data make two points immediately apparent. The first is that participants did take into account both their own skills and the skills of their classmates when assessing their comparative abilities. The standardized betas were positive for every one of the abilities in column 3 and negative for all but one in column 4. But by far the more striking result comes from contrasting the two columns. As predicted, participants' judgments of their own absolute abilities predicted their comparative ability judgments better than did their judgments of the skills of their peers for every one of the eight abilities ($p < .01$, by the sign test).

Discussion

The results of Study 1 are consistent with an anchoring-and-adjustment interpretation of comparative ability assessment. Participants' judgments of how they compare with their peers were based far more on their own skills than on their assessments of the skills of the comparison group. As a result, they thought they were above average when considering easy-ability domains but thought they were below average when considering more challenging skills.[3]

Of course, these results are correlational, and so the usual cautions apply. In particular, although the ease or difficulty of the ability domain reliably predicted whether participants thought that they were above or below average, it is unclear whether these differences in miscalibration reflected differences in the difficulty of the ability domains. For instance, most of the difficult skills are relatively specialized and rare skills, whereas most of the easy skills are common activities needed by almost everyone to run their daily lives. Thus it may have been differences in rarity, not difficulty, that produced the results. Similarly, the easy abilities simply may have been considered more important or necessary for living than the difficult abilities, and thus more prone to motivational distortion. Although an attempt was made to control for desirability, it is possible that desirability does not capture the issue of importance sufficiently.

To address these concerns, I asked an additional group of 48 Cornell undergraduates to rate the rarity and the importance of each of the abilities used in Study 1 on separate 1-to-10 scales. Although both rarity and importance correlated with domain difficulty (ps $< .06$), the correlation between domain difficulty and comparative ability estimates reported earlier remained strong after holding constant rarity, $r(5) = -.87, p < .025$; importance, $r(5) = -.93, p < .01$; or both, $r(4) = -.81, p = .05$.[4]

Still, the list of possible confounds is endless, thus partial-correlational analyses can never completely rule them out. A more convincing demonstration would be to experimentally manipulate participants' perceptions of their absolute skills within a single domain to produce inflated or deflated judgments of comparative ability. Study 2 was designed to do precisely that.

Study 2

Participants in Study 2 were recruited for a study of "integrative orientation." Of course, participants had never heard of the ability (it being fictitious), but the experimenter just happened to have a test ready that would ostensibly assess their integrative orientation ability. In actuality, the test assessed little, as it was rigged: Some participants received a very easy version, and others received a very difficult version. After taking the test, all of the participants then compared their integrative orientation ability with that of their peers and provided separate estimates of their own absolute ability and the absolute ability of their peers in a manner similar to the previous study.

The predictions were also the same as in the previous study. If people anchor on their own level of ability and insufficiently take into account the skills of others, then the former should account for more variance in comparative ability assessments than the latter. In addition, participants should tend to see themselves as above average when their absolute ability is high (i.e., when they receive the easy version of the test) and as below average when their absolute ability is low (i.e., when they take the difficult version of the test).

Method

Participants. One-hundred four Cornell University undergraduates (85 women, 19 men) earned extra credit in an introductory psychology course for their participation.

Procedure. On entering the lab, participants were told that the experiment concerned "integrative orientation ability," which was defined as "the ability to see the interconnections among different kinds of information in order to solve intellectual problems." In the first phase of the experiment, participants were asked to complete a written test of integrative ability ostensibly designed and validated by psychologists at the University of Michigan in the 1960s. The test consisted of a series of three-word sets (e.g., *elephant–lapse–vivid*), for which participants were asked to identify a fourth word that relates to each of the other three (e.g., *memory*). After three examples of this sort, participants were given 6 min in which to solve 10 sets.

Participants received either an easy or a difficult version of the test, modeled after materials developed by Mednick (1967) and modified by

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[3] One possible artifact that may have produced the below-average effects observed in this study is that participants may have had no experience with some of the difficult activities, such as computer programming. If so, they may have thought that assigning themselves a low percentile was appropriate, even if they did not necessarily think they were any less skilled than their peers. To investigate this possibility, I conducted a follow-up set of analyses examining only those participants who indicated that they had some experience with each of the activities listed ($n = 19$). Note that this is a conservative test for the below-average effect, not only because of the reduction in power caused by halving the sample size, but because participants who are experienced in an ability domain are undoubtedly more skilled than those who are not. Nevertheless, the results were virtually identical. Participants once again thought that they were above average when considering easy domains (M percentile = 64.6), $t(18) = 5.60, p < .0001$, and below average when considering difficult domains (M percentile = 36.1), $t(18) = -3.59, p < .01$. These results suggest that the tendency for participants to rate themselves as below average was not artifactually produced by inexperience with the difficult tasks.

[4] A similar pattern emerged when participants rated the rarity and the importance of each of the abilities used in the College Board survey. Here, too, the relationship between domain difficulty and the percentage of survey respondents rating themselves above average remained strong after holding constant rarity ($r = .78, p < .01$), importance ($r = .52, p < .07$), or both ($r = .60, p < .05$).

Trope and Brickman (1975) and McFarlin and Blascovich (1984). In the easy test, the sets were fairly easy to solve. For example, one set was *athletes–web–rabbit,* for which the answer is *foot.* In the difficult test, the sets were more difficult (e.g., *bass–complex–sleep*).[5]

After taking the test, participants estimated their own skills and the skills of their peers in a manner similar to Study 1. Participants first compared their own integrative orientation ability with that of other students from their course by writing down a percentile from 0 (*I'm at the very bottom*) to 50 (*I'm exactly average*) to 99 (*I'm at the very top*). Participants then rated their own absolute ability and the absolute ability of their classmates, each on scales from 1 (*very unskilled*) to 10 (*very skilled*). Participants also rated the desirability and ambiguity of integrative orientation on separate 10-point scales. As in Study 1, the order in which participants answered these questions was counterbalanced across participants. Finally, participants were debriefed with regard to the need for deception and were thanked for their participation.

Results

Manipulation check. An examination of the number of items answered correctly revealed that the manipulation was successful: Participants taking the easy version of the test answered an average of 8.1 questions correctly, whereas those taking the difficult version of the test answered only 1.9 questions correctly, $t(102) = 16.86, p < .0001$. As expected, this manipulation caused participants in the easy-test condition to rate their absolute integrative orientation ability as higher ($M = 7.0$) than did participants in the difficult-test condition ($M = 4.5$), $t(102) = 6.97, p < .0001$.

Above- and below-average effects. Also as predicted, participants who received the easy version of the test ($n = 49$) believed, on average, that their integrative orientation ability was above average: The mean percentile estimate was 63.4, a number significantly greater than 50, $t(48) = 5.38, p < .0001$. Participants who received the difficult version of the test ($n = 55$), in contrast, put themselves in the 41.9th percentile—significantly below average, $t(54) = -2.85, p < .01$. As in Study 1, this below-average effect persisted despite the fact that participants in the difficult-test condition found integrative orientation ability to be quite desirable. Desirability ratings exceeded the midpoint of the scale by 1.1 points, a highly significant difference, $t(54) = 4.69, p < .0001$.

One unexpected finding was that participants found integrative orientation to be slightly more desirable if they had received the easy version of the test ($M = 7.4$) than if they had received the difficult version ($M = 6.6$), $t(102) = 2.12, p < .05$, a finding that may reflect the operation of some motivational distortion. However, the fact that both groups found integrative orientation to be desirable suggests that the tendency to see oneself as below average was not motivationally driven. Moreover, an analysis of covariance testing the difference between participants' self-assessments in the two conditions with desirability held constant was highly significant, $F(1, 101) = 26.24, p < .0001$.

Nor can the results be explained by differences in ambiguity. Participants in the difficult-test condition found integrative orientation to be less concrete ($M = 3.1$) than did participants in the easy-test condition ($M = 4.2$), $t(102) = 3.59, p < .001$, which, as in Study 1, would presumably work to increase rather than decrease participants' comparative ability estimates.

The judgmental weight of own versus peers' abilities. Were participants' judgments of how they compare with their peers based more on their assessments of their own ability than on their assessments of the skills of their peers? To investigate, I first conducted a multiple regression predicting participants' estimates of how they compare with their peers from their estimates of their own ability and the ability of their peers, respectively. As in Study 1, participants' estimates of their own ability predicted their comparative ability judgments better than did their estimates of the skills of their peers, βs = .90 ($p < .0001$) and $-.07$ (*ns*), respectively. These effects were virtually unchanged when participants' ratings of desirability and ambiguity were added to the regression.

The magnitude of this egocentric weighting is further highlighted by a LISREL path analysis (Jöreskog & Sörbom, 1993) comparing two causal models: the first a fully saturated model predicting comparative ability assessments from self-judgments and peer judgments, and the other a restricted model with the path from peer judgments set to zero. As Figure 1A illustrates, the fully saturated model yielded a highly significant path from self-judgments to comparative ability judgments ($Z = 14.87, p < .0001$) but no causal path stemming from peer judgments ($Z = -1.22$, *ns*) mirroring the data presented above. Moreover, as illustrated in Figure 1B, the path from self-judgments to comparative judgments was also significant when the path from peer judgments was set to zero ($Z = 16.64, p < .0001$). In fact, a chi-square test shows that this restricted model fit the data just as well as the fully saturated model, $\chi^2(1, N = 104) = 1.50, p = .22$. In other words, participants' judgments of their own ability explained their assessments of how they stack up against their peers every bit as well as their judgments of their own ability *and* the ability of their peers.

Discussion

The results of Study 2 provide experimental evidence that people rate themselves as above average when their absolute abilities are high and below average when they are low. Participants who were led to believe that their own integrative orientation ability was high put themselves in the 63rd percentile, whereas those who believed it was low put themselves in the 42nd percentile.

In some sense, this error is quite forgivable given the success of the manipulation. After all, the modal number of test items missed in the easy-test condition was only one—precisely the modal number of items answered correctly in the difficult-test condition. Given these extreme scores, coupled with the novelty of integrative orientation, participants may have assumed that their peers were slightly less skilled (in the easy-test condition) and slightly more skilled (in the difficult-test condition) than they themselves. This tendency, quite apart from any anchoring and adjustment, could have produced the above- and below-average effects observed.

Despite the plausibility of this account, two aspects of the data rule it out. First, there was only a slight tendency for participants to rate their own skills any differently than they rated the skills of their classmates. Although participants in the difficult-test condition rated themselves as less skilled than their peers by just under one scale point, $t(54) = -3.47, p < .01$, there was no reliable difference between self- and peer ratings in the easy-test condition,

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[5] *Deep.*

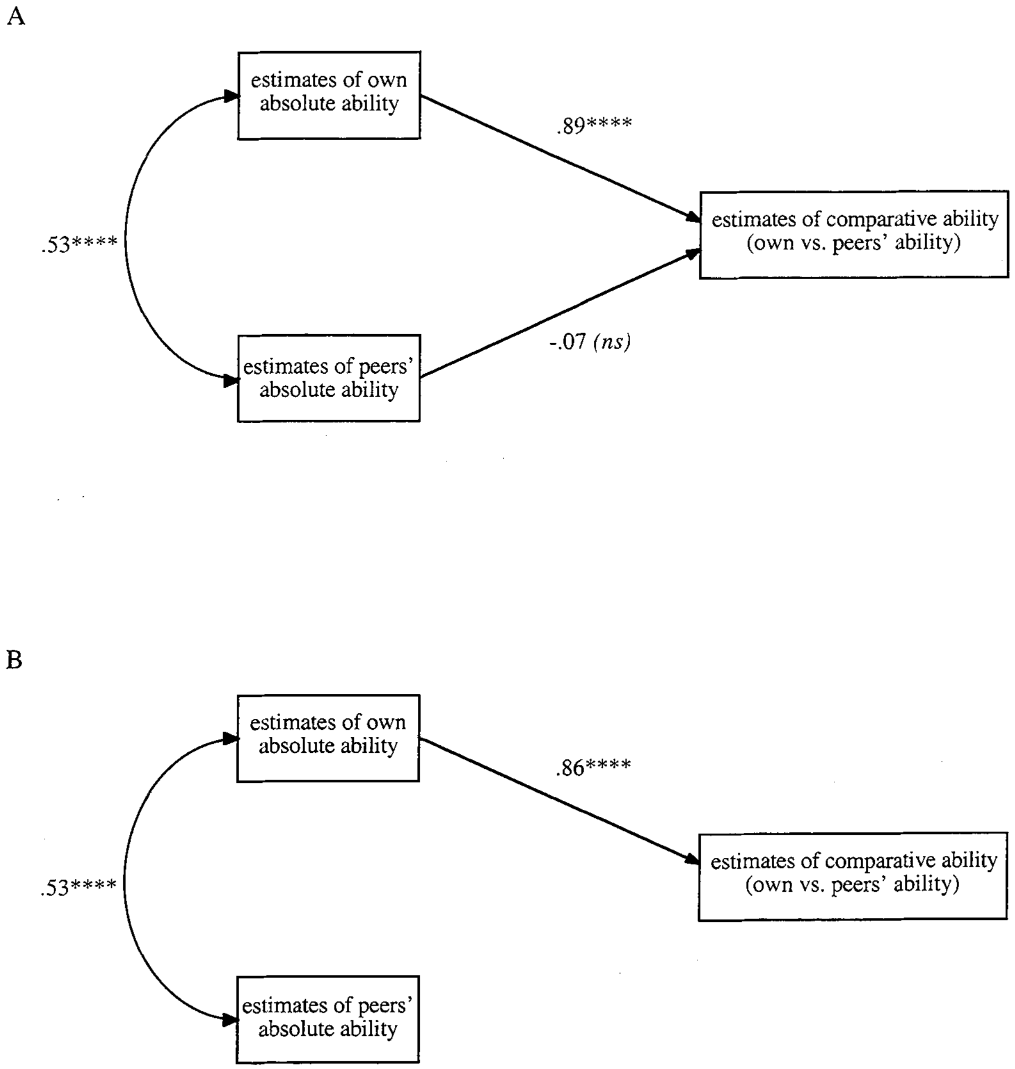
A
estimates of own absolute ability
.89****
estimates of comparative ability (own vs. peers' ability)
.53****
estimates of peers' absolute ability
-.07 (ns)
B
estimates of own absolute ability
.86****
estimates of comparative ability (own vs. peers' ability)
.53****
estimates of peers' absolute ability

Figure 1. Study 2 ($N = 104$) path analyses predicting participants' comparative ability judgments from their estimates of their own absolute ability and the absolute ability of their peers for (A) the full model and (B) the restricted model. Standardized path coefficients (directional paths) appear on single-headed straight arrows. The correlations appear on the double-headed curved arrows. $^{****}p < .0001$.

M difference = 0.25, $t(48) = 1.09$, $p = .28$. Despite this fact, those who received the easy version of the test consistently rated themselves as above average.

The principal evidence against this account, however, comes from the path analyses depicted in Figure 1. As can be seen, participants' judgments of how they stack up against their peers were simply not a function of their perceptions of their peers. Instead, as in Study 1, participants' comparative ability judgments were based almost entirely on their assessments of their own absolute skills. As a result, participants rated themselves as above average when their absolute skills were high and below average when they were low—independent of their impressions of the comparison group. In Study 3, the anchoring-and-adjustment interpretation of these biases is examined more directly.

Study 3

The data presented thus far suggest that when people compare themselves with their peers, they egocentrically focus on their own level of ability. These results are consistent with an anchoring-and-adjustment interpretation, but an alternative explanation is that people underweight the skills of the comparison group intentionally. After all, there is a considerable discrepancy in the amount of information people have about their own abilities and those of the average person. Although we encounter countless examples of other people's driving, we obviously have much more experience with our own. Similarly, whereas we are all too aware of our own incomprehension of the Java programming language, our impression of the computer proficiency of the average person is at best only an educated guess. Thus, people may underweight the skills of the comparison group intentionally because they are a relative unknown.

Study 3 was thus designed to explore the anchoring-and-adjustment interpretation of this egocentric weighting more directly. One hallmark of the anchoring-and-adjustment heuristic is that anchoring is a more automatic and effortless process than adjustment (Jones, 1990). As such, anchoring requires scant cognitive resources and is relatively impervious to concurrent processing demands, whereas adjustment requires significant resources and is more debilitated by concurrent processing. Indeed, this fundamental difference in processing requirements is one of the reasons adjustment tends to be insufficient in the first place. Because mental systems must compete for access to a finite pool of cognitive resources (Baddeley & Hitch, 1974; Kahneman, 1973; Norman & Bobrow, 1975), cognitively demanding processes such as adjustment tend to suffer more than automatic operations such as anchoring. As a result, the "adjustment" in anchoring and adjustment is often incomplete, resulting in a final judgment that is biased toward the anchor (see Gilbert, 1991, for a more detailed description of this process).

These differential processing demands suggest that placing constraints on the cognitive resources one is able to bring to bear on assessments of one's comparative standing ought to influence these judgments in predictable ways. If people anchor on their own level of ability and then adjust this estimate to take into account the skills of others, cognitive load ought to make this adjustment even more difficult to render. When one's absolute abilities are high, this should result in an increased above-average effect: It will be even harder to realize that although we may be experienced drivers, so too are most people. When one's absolute abilities are low, on the other hand, cognitive load ought to result in an increased below-average effect. It will be even more difficult to realize that most of our peers are probably just as inept as we are at constructing a web page, sculpting a statue from bronze, or executing a flawless dismount from the uneven parallel bars.

The reader may note the similarity between this account and the one Gilbert and his colleagues have argued underlies the correspondence bias, or the tendency to make dispositional rather than situational attributions for an actor's behavior (Gilbert, 1989; Gilbert, Krull, & Pelham, 1988; Gilbert & Malone, 1995; Gilbert, Pelham, & Krull, 1988; see also Quattrone, 1982). According to their account, people first draw dispositional inferences for an actor's behavior (e.g., "Bill Clinton is dishonest") and then adjust these inferences to take into account the situational constraints on the actor (e.g., "But who wouldn't dissemble if honesty meant giving up the presidency?"). Because the situational adjustment is effortful, and thus insufficient, people's attributions tend to be more dispositional than is warranted (i.e., the correspondence bias). To test this mechanism, Gilbert found a number of creative ways to distract participants as they watched a target person articulate an attitudinal position under situational constraints. In each, cognitive load made the situational adjustment more difficult to make, exacerbating the correspondence bias.

The present study was designed to assess the role of anchoring and adjustment in comparative ability assessment by using an analogous paradigm. As in Study 1, participants compared themselves with their peers along several easy and difficult ability domains; only this time, half of the participants provided their judgments while mentally rehearsing a string of digits, a task prior research has shown to be cognitively taxing (Gilbert, Giesler, & Morris, 1995; Gilbert & Hixon, 1991; Gilbert, Pelham, & Krull, 1988; Spencer, Fein, Wolfe, Fong, & Dunn, 1998).

Method

Participants. Forty-nine Cornell University undergraduates (31 women, 18 men) from several introductory courses in psychology participated individually and earned extra credit for their participation.

Procedure. On entering the lab, participants were greeted and informed that the experiment was part of a study of how people gauge their own skills and abilities. They were then escorted to a computer and randomly assigned to either the cognitive-load or control condition.

Participants in the cognitive-load condition were first presented with a string of eight consonants they were asked to memorize and rehearse. After clicking on a portion of the screen labeled *next item,* they were then presented with a new screen asking them to compare themselves with other students from their class along one of four abilities. Participants then viewed a third screen and were asked to type the letters they had been asked to memorize earlier. This cycle repeated for each ability, with a new string of letters to be memorized for each. Participants in the control condition followed a similar procedure but without the memorization task.

Two of the abilities were chosen because they are very easy (*speaking English* and *reading*) and two because they are very difficult (*constructing a web page* and *riding a unicycle*). The abilities were those that yielded the highest and lowest absolute skill ratings out of a pretest ($n = 64$) of 38 abilities. After rendering their final ability judgment, participants in both conditions were fully debriefed and were thanked for their participation.

Results

Above- and below-average effects. As predicted, the ease or difficulty of the ability determined whether participants believed they were above or below average. For each participant, two composite scores were derived: one averaging across the two easy abilities, and the other averaging across the two difficult abilities. As in the previous studies, participants thought that they were above average in terms of the easy abilities (M percentile = 78.4), $t(48) = 12.23$, $p < .0001$, and below average in terms of the difficult abilities (M percentile = 23.1), $t(48) = -8.53, p < .0001$.

Effects of cognitive load. As Figure 2 illustrates, cognitive load significantly exacerbated the extent of bias. This effect was highlighted by a 2 (domain difficulty: easy vs. difficult) × 2 (condition: cognitive load vs. control) analysis of variance, which revealed a significant interaction, $F(1, 47) = 5.14, p < .05$.[6] When considering easy abilities, cognitively taxed participants believed they were 7.6 percentile points more above average than did participants in the control condition, $t(47) = 1.66$, $p = .10$, but believed they were 12.0 percentile points more below average when considering more challenging skills, $t(47) = 1.94, p < .06$.

Discussion

These results suggest that the anchoring-and-adjustment heuristic may underlie the tendency to underweight the skills of others when

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[6] As expected, this analysis also yielded a highly significant main effect for easy versus difficult abilities, $F(1, 47) = 170.22, p < .0001$. It did not yield, nor does anchoring-and-adjustment predict, a main effect for cognitive load ($F < 1$), consistent with previous work (Alicke et al., 1995, Study 7).

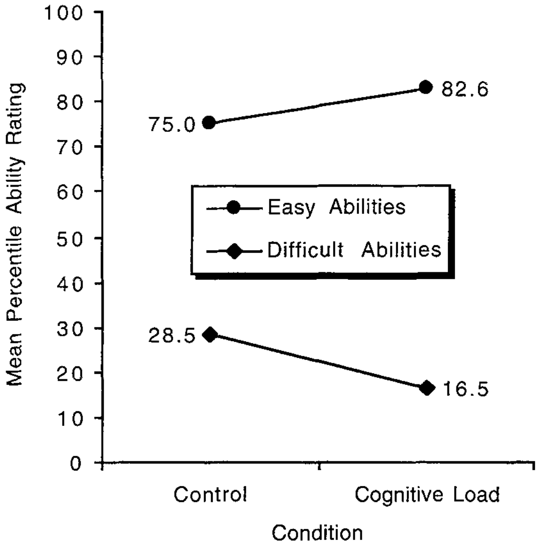

Figure 2. Mean above- and below-average effects by cognitive-load condition, Study 3 (*N* = 49).

making comparative ability judgments. Just as cognitively busy observers in person-perception studies show an increased correspondence bias because their ability to take into account the situation is impaired (Gilbert, Pelham, & Krull, 1988), distracted participants in the present study showed increased comparative ability biases because their ability to take into account the skills of others was impaired.

General Discussion

Insufficient adjustment is a common error in human judgment. It is thought to underlie the hindsight bias (Pohl & Hell, 1996), the correspondence bias (Gilbert, Pelham, & Krull, 1988; Jones, 1990; Quattrone, 1982), base-rate neglect (Griffin & Tversky, 1992), primacy effects in opinion revision and belief updating (Hogarth & Einhorn, 1992), overconfidence (Griffin & Tversky, 1992), and a recently documented tendency for people to overestimate the extent to which their actions and internal states are noticed by others (Gilovich, Kruger, Savitsky, & Medvec, 1999; Gilovich, Medvec, & Savitsky, 1999; Gilovich, Savitsky, & Medvec, 1998). In each case, perceivers insufficiently correct an initial belief or impression, resulting in a final judgment that is biased toward the anchor.

The present research extends this general phenomenon to the realm of comparative ability assessment. When people compare themselves with others, their own level of ability serves as a judgmental anchor from which they adjust to take into account the skills of others. Because such adjustments tend to be insufficient (Jacowitz & Kahneman, 1995; Quattrone, 1982; Slovic & Lichtenstein, 1971; Tversky & Kahneman, 1974), the answer to the question "How do I compare with my peers?" is based considerably more on "I" than "my peers." This egocentrism is apparent in the differential weighting analyses reported in Studies 1 and 2 and has been replicated elsewhere. Kruger and Dunning (in press), for instance, report a series of studies in which participants taking tests of English grammar or logical reasoning estimated their own performance on the test, the performance of the typical person taking the test with them, and their performance in relation to this person. In each study, participants' estimates of how they compare with their peers were predicted far better by their impressions of their own skills than by their impressions of the skills of their peers.

The egocentric weighting of the self in comparative judgments is unlikely to be limited to ability assessment. Other researchers have noted a similar tendency in judgments of risk (Heine & Lehman, 1995; Weinstein, 1980; Weinstein & Lachendro, 1982). When assessing the likelihood of avoiding negative events such as getting a divorce or contracting a venereal disease, people consistently believe their chances are better than average—even after receiving information indicating that their peers are no more at risk than they are themselves (Weinstein, 1980). Tellingly, when Weinstein and Lachendro (1982) asked participants to explain how they arrived at their judgments, participants proceeded to describe their own risk factors, but almost never did they mention other students. "They seemed to ignore the fact that the judgments they were explaining had involved a comparison with others." (p. 199) In addition, Heine and Lehman (1995) found that people's estimates of their own risk predict their comparative risk judgments better than their estimates of the risk facing the average person. As Heine and Lehman speculated, "because most people assumed that the negative events . . . were unlikely to happen to them, when answering the relative-likelihood items they were anchored at this point" (p. 604).

Weinstein and Lachendro's (1982) results raise the question of whether people might focus on their own standing when explaining their comparative ability judgments as well. Preliminary analyses from a study conducted by Kruger and Gilovich (1999) suggests that they do: 22 participants were interviewed about their comparative standing on 22 abilities and then were asked to explain how they arrived at their estimates. Of the 484 estimates and explanations offered, 97% began with a reference to participants' own level of ability; 62% ended there, with no reference to the abilities of others whatsoever.

Recent work by Klar and Giladi (1998) suggested that a similar underweighting of the comparison group may even be involved in gauging the comparative abilities of others. In one study, participants rated a randomly selected member of a liked group as more intelligent, friendly, organized, fair, considerate, polite, and generous than the average member of the group, presumably because participants rated the target favorably and did not take into account the fact that the comparison group was equally favorable. Consistent with this hypothesis, path analyses on participants' comparative ratings of the target and their absolute ratings of the target and the comparison group revealed a pattern strikingly similar to that observed in Studies 1 and 2: Participants' comparative judgments were predicted far better by their absolute judgments of the target than by their absolute judgments of the comparison group. Moreover, when the target was drawn from a disliked group (such as a member of the Islamic fundamentalist group "Hamas"), participants systematically rated the target as below average. It thus appears that when gauging the comparative abilities of anyone—be it oneself or someone else—people take insufficient account of the comparison group. The present research thus complements this work by suggesting that the anchoring-and-adjustment heuristic may underlie this effect, although future work is necessary to examine the role of anchoring in judgments about others more explicitly.

One implication of both lines of work is that the extent of comparative ability miscalibration ought to depend on the method used by researchers to assess it. Historically, comparative ability judgments have been obtained in one of two ways. The *direct* or *explicit* method involves asking participants to compare themselves with others on a single scale (typically a percentile), with the midpoint of the scale labeled *average* (see, e.g., Alicke et al., 1995; Dunning et al., 1989; Kruger & Dunning, in press; Weinstein, 1980). The *indirect* or *implicit* method involves having participants assess themselves and their peers separately, with a null difference between the two corresponding to *average* (e.g., Klar et al., 1996; Perloff & Fetzer, 1986; Rothman, Klein, & Weinstein, 1996). The present account suggests that the extent of bias ought to be greater when ability judgments are elicited directly, for it allows for differential weighting of participants' perceptions of their own abilities and the abilities of their peers.

Indeed, if the above- and below-average effects reported in this article are calculated indirectly, by taking the difference between self- and peer ratings, the effects are noticeably attenuated. In Study 1, for example, the effect sizes by this calculation are smaller than those derived by the direct method for seven out of the eight abilities. And recall that Study 2 participants who received the easy version of the integrative orientation test systematically believed that their integrative orientation skills were above the 50th percentile—yet they rated their own absolute skills no different than they rated the absolute skills of their peers. Other work has obtained similar findings. In every one of the studies by Kruger and Dunning (in press) mentioned earlier, the direct method yielded a more robust above-average effect than the indirect method.

At first glance, the present research presents something of a paradox: If below-average effects are to be expected in domains in which a person's absolute skills, traits, and chances are low, then why are above-average effects so easy to demonstrate? After all, prostitutes and their clients, groups particularly below average in terms of their chances of avoiding AIDS, have been found to gauge their chances of avoiding AIDS as above the population average (van der Velde, van der Pligt, & Hooykaas, 1994).

One reason is that biased self-assessment, like all judgmental errors, is multidetermined: It is the product of numerous motivational, cognitive, and personality factors, including the desire to think well of oneself (Alicke, 1985; Kunda, 1990; Taylor & Brown, 1988), the tendency to define traits and abilities self-descriptively (Dunning et al., 1989), rampant narcissism (Oliver & Robins, 1994), and the fact that in many domains, the incompetent do not possess the meta-cognitive ability to be able to recognize their own incompetence (Kruger & Dunning, in press). Each of these mechanisms are thought to increase—not decrease—one's beliefs about how one stacks up against others. In gauging one's chances of avoiding AIDS, for example, there is doubtless more than a little motivation to see oneself as above average. Moreover, the proposed anchoring-and-adjustment mechanism predicts a below-average effect only when one believes one's absolute skills, traits, or chances are low. The factors listed above undoubtedly help buffer one against this belief. In short, it is hardly surprising that the above-average effect is so commonly observed.

Still, the present research makes it clear that such effects are not as ubiquitous as once thought. In all three studies, participants systematically believed that they were below average when considering challenging ability domains—underestimating their percentile rank by as much as 27 percentile points. There may be room for Mick Fleetwood after all.

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